be about to and the proximal future

James N. Collins • Stanford University
LSA Annual Meeting, January 10, 2015

1 Introduction

• In focus: the English future expression be about to in positive and negative contexts.

1. The gas pipe is about to burst.
   → The gas pipe bursts at some time t (so long as everything goes as expected)
   → t must fall within a short period after the reference time

2. The gas pipe is not about to burst.
   → The gas pipe does not burst at any time t within a short period after reference time
   → Gas pipe may burst after the relevant period finishes

• The claims:
  - be about to places the event time at a point in the not too distant future.
  - be about to introduces a metaphysical modality component
  - be about to systematically scopes above negation (similar to neg-raising expressions like want or think, as well as PPIs like must or should).

• be about to lies at the intersection of various important semantic issues:
  - the interrelationship between futurity and modality
  - the treatment of neg-raising predicates and/or positive polarity items
  - the context dependency of determining temporal proximity

• The plan:
  §2 A modal analysis of be about to
  §3 Empirical landscape of be about to and negation
  §4 A treatment of the behavior of be about to under negation

2 be about to as a modal

• be about to forward-shifts the evaluation time of the prejacent to a time shortly after reference time.

3. a. The pencil is about to roll off the table. (future)
   ⇒ The pencil rolls off the table at t and t is "shortly" after now

   b. Little did he know, Napoleon was about to be defeated. (future in the past)
   ⇒ Napoleon defeated at t1 and t1 is "shortly" after t2, and t2 before now

1Thanks to Cleo Condoravdi, Dylan Bumford, the audience at California Universities Semantics and Pragmatics (CUSP) 2014, the Stanford SemPrag group and the Stanford Words With Friends discussion group for helpful comments and discussion.
• Is the temporal forward-shifting the only function of be about to (warranting an analysis like (4a))?

• Does be about to additionally contribute some modal meaning component (as in (4b))? (following analyses for futurate will in Copley 2002, Condoravdi 2003, etc.)

\[ \text{(4a)} \]

\[ \text{(4b)} \]

Where \( j \triangleright i \) is true if \( j \) is soon after \( i \) (left informal for now),
and \( R(i, w) \) is the set of worlds accessible from \( \langle w, i \rangle \) via the accessibility relation \( R \)

• Evidence for the analysis in (4b) comes from non-veridical cases of be about to.

• be about to is able to combine with past tense operators, in which case there is no entailment that the prejacent is/became true.

\[ \text{(5)} \]

Napoleon was about to win the war, but the snow foiled his plan.

• Assuming an existential quantifier analysis of the past tense (e.g., Prior 1967, Richards 1989), the extensional, purely temporal analysis of be about to makes the wrong prediction.

\[ \text{(6a)} \]

\[ \text{(6b)} \]

\[ \text{(6c)} \]

• (6c) makes the claim that the prejacent \( \phi \) holds in the world of evaluation, predicting the but continuation in (5) is infelicitous.

• Under a modal analysis we obtain the correct prediction if the accessibility relation is not realistic (doesn’t necessarily contain the actual world).

\[ \text{(7a)} \]

\[ \text{(7b)} \]

\[ \text{(7c)} \]

• As the prejacent \( \phi \) is assessed relative to all accessible worlds (which may not include the actual world), there is no requirement that \( \phi \) holds in the actual world.

• A modal analysis correctly predicts the non-veridicality of be about to.
2.1 Metaphysical Modality

- As has been proposed for other futurate expressions, *be about to* universally quantifies over metaphysical alternatives.
- Formal set-up follows Thomason 1984, Condoravdi 2002:
  - Proposition truth evaluated at time-world pairs, assumes a $T \times W$ frame
  - For all $t$, $\simeq_t$ is an equivalence relation over worlds
  - For any $w_1, w_2$ and $t_1, t_2$, if $w_1 \simeq_{t_1} w_2$ and $t_2 \prec t_1$, then $w_2 \simeq_{t_2} w_1$
- Worlds have identical pasts up until a point, at which they diverge into possible futures.
- We end up with a “branching worlds model of the future”

\[
\begin{array}{c}
  t_1 \\
  \downarrow \\
  t_2 \\
  \downarrow \\
  t_3 \\
  \downarrow \\
  t_4 \quad t_4 \\
  \downarrow \\
  t_5 \quad t_5 \quad t_5 \\
  \downarrow \\
  w_1 \quad w_2 \quad w_3 \quad w_4 \\
\end{array}
\]

- This supplies the quantificational domain for *be about to*; a universal quantifier over metaphysically possible futures branching from the time of evaluation.
- The modal base = the metaphysical alternatives of $w$ at $t$, \{w' | w' \simeq_t w\}.
  - In (8), the alternatives of $w_1$ at $t_2$ are \{w_1, w_2, w_3, w_4\}
  - The alternatives of $w_1$ at $t_4$ are \{w_1, w_2\}

\[
\text{[be about to}(p)\text{]}^{(w,i)} = \forall v \in \text{Metaphysical}(i, w)[\exists j \triangleright i[p(j, v)]]
\]

- Not exactly: the quantificational domain is realistic (contains the world of evaluation), so wrongly predicts past tense *about to* sentences are veridical.
- *be about to* additionally restricts the quantificational domain via a stereotypical ordering source (following the Kratzer (1981, 1991) semantics for epistemic modals).
- A stereotypical ordering source: a (reflexive, transitive) ordering over worlds, where worlds which conform more with what is more reasonably expected at $w, t$ rank higher.
- *be about to* universally quantifies over metaphysically accessible worlds from $w, t$ which conform most with what is reasonably expected at $w, t$.

\[
\begin{align*}
\text{a. } & \text{Best}(t, w, F, g) = \lambda u. F(u) \land \neg \exists v [F(v) \land u <_g(t, w) v] \\
\text{b. } & \text{[be about to}(p)\text{]}^{(w,i)} = \forall v \in \text{Best}(i, w, F_{\text{metaphys}}, g_{\text{stereo}})[\exists j \triangleright i[p(j, v)]]
\end{align*}
\]
3  *be about to* and polarity

- How does *be about to* interact with polarity in comparison with other modal expressions?
- *be about to* seems to neither scope below nor above clause-mate negation.
- The intuitive scoping has negation scoping *between* the modal component of *be about to*, and its temporal component.

(11) Class is not about to be dismissed
\[ \square \neg \exists t' \triangleright t[p(t)] \]  
(Expected that at no time in the near future class is dismissed)

- The surface scoping, NOT > ABOUT is too weak: underplaying the intuitive certainty that class will not be dismissed.

(12) Class is not about to be dismissed
\[ \not \square \exists t' \triangleright t[p(t)] \]  
(No expectation that in the future, class is dismissed) compatible with expectations not determining either way whether the class will be dismissed.

- The scoping ABOUT > NOT is also too weak: the class may be dismissed in the relevant span of proximal future, so long as it is not dismissed at some point.

(13) Class is not about to be dismissed
\[ \square \exists t' \triangleright t[\neg p(t)] \]  
(Expectation that at some time in future class is not dismissed) compatible with expectations that the class is dismissed several times in the near future

- Rule of interpretation: if we take the surface scope, but “move” negation directly under the necessity modal contributed by *be about to*, the right result is obtained.
- Carries over to negative quantifiers (existential and universal).

(14) [It's a naive world with no problems where] **no one is about to** grab your handbag. (COCA)
Surface scope: \[ \forall x [\neg \square \exists t' \triangleright t[\text{grabs-handbag}(x, t')] ] \]  
(\[ \neg \exists \iff \forall \neg \])
Observed scope: \[ \forall x [\square \neg \exists t' \triangleright t[\text{grabs-handbag}(x, t')] ] \]
*For every x, it's expected that there is no near-future time where x grabs your handbag*

(15) Not everyone is about to give up on public schools. (COCA)
Surface scope: \[ \exists x [\neg \square \exists t' \triangleright t[\text{give-up}(x, t')] ] \]  
(\[ \neg \forall \iff \exists \neg \])
Observed scope: \[ \exists x [\square \neg \exists t' \triangleright t[\text{give-up}(x, t')] ] \]
*For some x, it's expected that there is no near-future time where x gives up on public schools*

- This property of scoping over negation is familiar from other kinds of modals, e.g.:
  i. neg-raising predicates like *think* or *want*,
  ii. positive polarity items like *must* or *need*,
  iii. or even items which are both neg-raisers and PPIs (as Homer 2014 claims for *should*).

- Below I lay out some distinguishing features of modals which systematically scope above negation, and discuss which way proximal *be about to* falls.
Results

- **Property 1 – Cancellability**: Can the modal scope below negation in certain contexts?
  *Answer:* No, the modal component of *be about to* always scopes above negation.

- **Property 2 – Cyclicality**: Does the modal scope below negation when the modal is in the complement clause of *not think that* or *not believe that*?
  *Answer:* No, the modal component of *be about to* always scopes above negation.

- **Property 3 – Shielding**: Does the modal scope below negation when a universal quantifier intervenes between negation and the modal?
  *Answer:* No, the modal component of *be about to* always scopes above negation.

- For time constraints I only discuss Properties 1 and 2 (but see (15) for Property 3).

- I also suggest these properties hold of *will* and *be going to*, pointing to a broader property of metaphysical futurate expressions.

3.1 **Property 1: Cancellability**

- Generally, in an out-of-the-blue utterance of a negative sentence, both neg-raisers and PPIs are interpreted with wide scope over clause-mate negation.

(16) I don’t want to make a lot of money.
  \[\Rightarrow Sp \text{ prefers to not make a lot of money}. \quad (\Box \neg p)\]
  \[\Rightarrow Sp \text{ doesn’t prefer to make a lot of money}. \quad (\neg \Box p)\]

- With neg-raisers, the strengthening inference can fail to arise in particular contexts.

(17) *(Context: in a job interview, a candidate is weighing up several parameters)*
I don’t want to make a lot of money.
  \[\Rightarrow Sp \text{ prefers to not make a lot of money}. \quad (\Box \neg p)\]
  \[\Rightarrow Sp \text{ doesn’t prefer to make a lot of money}. \quad (\neg \Box p)\]

- An initial characterization of these contexts: where it is clear that a modal assessor/agent has conflicting opinions/preferences/beliefs.

- In analogous contexts for *be about to*, e.g. where the speaker is conflicted between several possible futures, the strengthening inference persists in an analogous context to the prototypical neg-raiser *want*.

(18) *(Context: The speaker is considering several possible actions the U.S. Government could take regarding smoking)*
The U.S. Government is not about to outlaw cigarette smoking.
  \[\Rightarrow \text{It is expected there is no near-future time where U.S. outlaws smoking} \quad (\Box \exists t' t[p(t')])\]
  \[\Rightarrow \text{No expectation there is a near-future time where U.S. outlaws smoking} \quad (\neg \Box \exists t' t[p(t')])\]

- PPIs such as deontic *must*, *should* may only be interpreted as having wide scope over clause-mate negation. This effect is not mediated by contextual factors.
(19) **Context:** The U.S. government has several available paths of action including outlawing smoking and not outlawing smoking.

The U.S. Government must/should not outlaw cigarette smoking.

⇒ the U.S. is obligated to not outlaw smoking  \( (\Box \neg p) \)

⇒ the U.S. is not obligated to outlaw smoking  \( (\neg \Box p) \)

• In this respect, *be about to* behaves like the PPIs *must* and *should*.

### 3.2 Property 2: Embedded Under Neg-Raisers (Cyclicity)

• Neg-raisers (*want, think*) behave differently from PPIs (*must, should*) embedded under *not think that* or *not believe that*.

• **Case 1:** a neg-raiser embedded under *not think*: \([_{CP1} \neg \text{think} \left[_{CP2} \text{NR2 } \phi \right]]\)

• By default, the matrix negation is interpreted as scoping below NR2 (in the lowest position), though other scopings are possible subject to contextual factors as above.

(20) John doesn’t think that Bill wants to leave.

⇒ John thinks that Bill prefers to not leave

⇒ John thinks that Bill doesn’t prefer to leave (Bill may be indifferent)

• **Case 2:** a PPI embedded under *not think*: \([_{CP1} \neg \text{think} \left[_{CP2} \text{PPI } \phi \right]]\)

• Matrix negation takes intermediate scope between *think* and the PPI.

(21) **Context:** John is a corporate lawyer, Bill is his client.

John doesn’t think that Bill must\( _{deon} \) lie on his tax return.

⇒ John thinks that Bill is not obligated to lie  \( (\Box \neg \Box) \)

⇒ John thinks that Bill is obligated to not lie  \( (\neg \Box \Box) \)

• Embedded under *not think that*, *be about to* behaves like the neg-raiser *want*, scoping above negation.

• In the configuration \([_{CP1} \not \text{think} \left[_{CP2} \text{be about to } \phi \right]]\), the negation scopes below *be about to*.

(22) John doesn’t think that Bill is about to leave.

⇒ John thinks that John is not certain that Bill leaves (Bill may leave)  \( (\Box \neg \Box) \)

⇒ John thinks that John is certain that Bill doesn’t leave  \( (\neg \Box \Box) \)

• Given the cancellability test, you may have expected that *be about to* behaves like a PPI, but under a superordinate negation, *be about to* behaves like a neg-raiser...

• ...with the qualification that it does not allow intermediary scopings of negation.

### 4 Towards an account of *be about to*’s strengthening inference

• The modal contribution of *be about to* (and *will*/going *to*) always scopes over clause-mate negation.

• Following approaches to neg-raising inferences (Bartsch 1973, Gajewski 2007, Romoli 2013, Homer 2014), *be about to* contributes a not-at-issue meaning component of “homogeneity".
(23) \([\text{be about to}(p)]^{(w,i)}\)

a. \(\text{at-issue: } \Box_{\text{metaphys}} \exists j \triangleright i[p(j)]\)

b. \(\text{not-at-issue: } \Box_{\text{metaphys}} \exists j \triangleright i[p(j)] \lor \Box_{\text{metaphys}} \neg \exists j \triangleright i[p(j)]\)

- An utterance of \textit{be about to} comes with an assumption that the prejacent is settled: it is either instantiated in every world in the modal domain, or it is instantiated in none of them.

- Negation is interpreted in its surface scope position, yielding the following strengthening inference

(24) I’m not about to leave

i. AI: \(\neg \Box \exists j \triangleright i[p(j)]\)

ii. NAI: \(\Box \exists j \triangleright i[p(j)] \lor \Box \neg \exists j \triangleright i[p(j)]\)

iii. From (i) and (ii): \(\Box \neg \exists j \triangleright i[p(j)]\)

- Gajewski 2007, Homer 2014 argue the NAI content is a lexically triggered presupposition, which projects universally in quantificational sentences.

- This analysis makes the right predictions for sentences with negative quantifiers.

(25) No one is about to leave

i. AI: \(\forall x \neg \Box \exists j \triangleright i[P(j, x)]\)

ii. NAI: \(\forall y [\Box \exists j \triangleright i[P(j, y)] \lor \Box \neg \exists j \triangleright i[P(j, y)]\)

iii. From (i) and (ii): \(\forall x [\Box \neg \exists j \triangleright i[P(j, x)]\]

(26) Not everyone is about to leave

i. AI: \(\neg \forall x [\Box \exists t' \triangleright i[P(t, x)]\]

ii. NAI: \(\forall y [\Box \exists j \triangleright i[P(j, y)] \lor \Box \neg \exists j \triangleright i[P(j, y)]\)

iii. From (i) and (ii): \(\exists x [\Box \neg \exists j \triangleright i[P(j, x)]\]

- But is the \(\Box \phi \lor \Box \neg \phi\) component really a presupposition?

- It can get cancelled for (scalar) attitude predicates (e.g., \textit{want} and \textit{think}), but not for metaphysical futurates like \textit{about}, \textit{will}, and \textit{going to}? What derives this distinction?

- It doesn’t project like a presupposition

(27) a. Is John about to leave?

\(\Rightarrow \) \(it is settled whether John will leave or not\)

b. If John is about to leave, then he forgot his coat.

\(\Rightarrow \) \(it is settled whether John will leave or not\)

c. Perhaps John is about to leave.

\(\Rightarrow \) \(it is settled whether John will leave or not\)

- In part, due to its failure to project, Romoli 2013, characterizes \(\Box \phi \lor \Box \neg \phi\) as a lexicalised scalar alternative, in the framework of Chierchia, Fox, and Spector 2012.

- I leave the categorization of the not-at-issue content of \textit{be about to} as an open question.
5 Summary

- In this talk: a semantics for a previous unanalyzed modal in English, be about to in its use as a proximal future marker.
- Negation scopes beneath the modal contribution of be about to, but above the temporal contribution. Similar results for will and going to.
- I suggest the homogeneity condition proposed originally by Bartsch 1973 goes some way in accounting for this behavior.

References